AMSAT SATELLITE REPORT

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ASR Field Bureau Chief Named

Bob Nickels, KEØT, has been appointed Field Editor of *AMSAT Satellite Report (ASR)*. Located in Nebraska, Bob will be positioned well to report news originating anywhere in the U.S. He will be particularly concerned with providing a natural counterbalance to Washington-originated news which often dominates AMSAT news. Bob is to serve as a primary conduit for news and general interest articles in his capacity as *ASR* liaison to members. In addition, Bob is developing key contacts with regular news sources in several other nations. If you have a local or regional AMSAT-related event you wish to publicize, Bob would like to hear from you. Contact him at his address: Bob Nickels, KEØT, 802 S. Myrtle St., Kimball, NE 69145. Telephone (308) 235-4213.

Firewheel B Experiment Cancelled

A climate of deep concern arose in AMSAT leadership circles on 23 Feb. when various sources reported that the Max Planck Institute's Firewheel B spacecraft had been cancelled. Since Firewheel was to have been the co-passenger of AMSAT's own Phase IIIB spacecraft as well as the European Space Agency's ECS1 satellite, AMSAT was understandably concerned. Did the cancellation of Firewheel B mean that AMSAT had lost its ride?

As word of this potentially devastating event was relayed between key elements of the AMSAT management team, a note of restrained optimism surfaced when Dr. Karl Meinzer, DJ4ZC, called to say that it still looked OK for Phase IIIB on L7 in spite of the untimely demise of Firewheel B. That is where the matter now stands. A new schedule of launches has been announced by ESA (see box on the facing page) but it appears that we'll be on L7 when it lifts off. Though it seems likely AMSAT will have another co-passenger, it is too early to speculate on what vehicle it might be. It might be that ECS1 and Phase IIIB will make it a duet rather than the originally planned trio. AMSAT will be watching this area closely and *ASR* will report developments as they occur.

AMSAT Donations Looking Good

Vice President K9LF reports that at press time donations received since December had risen to over $25,000. Since much of that amount will be applied against matching funds offered by certain foundations, that base could expand significantly. Meanwhile, K9LF reports that donation acknowledgement letters will be going out shortly and apologizes for the short delay in processing them. Illness in the secretarial resource area has slowed response time, unfortunately. Nevertheless, all should have "QSL's" by tax time 15 April.

JAMSAT Contracts For Spaceframes

Harry Yoneda, JA1ANG/N3AMW arrived in New York City March 2 and presented AMSAT representatives a check for $5,500 from JAMSAT. The contribution from JAMSAT is earmarked for the construction of the spaceframes for both Phase IIIB and Phase IIIC. The spaceframes are the metalwork upon which all of the modules are mounted in the same manner as the engine, transmission, body, etc. are mounted on the frame of an automobile. Accepting on behalf of AMSAT were Executive Vice President, WA2LQQ and Chairman of the Management and Finance Committee, W2RS. The donation is the latest in an historically significant series of support efforts from Japan for the Amateur Space program (the gentlemen that brought you the Mode J transponder, to cite but one small example). Thanks to JAMSAT from all of AMSAT!

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Phase IIIB Frequencies Aired

AMSAT DL, which is leading the Phase IIIB transponder construction, has released a list of proposed frequencies for Phase IIIB. While the frequencies of the 70 cm to 2m transponder are unchanged from those intended for Phase IIIA, the surprise is the appearance for the first time of recommendations for a 23 cm to 70 cm transponder. Under the leadership of DJ4ZC, Dr. Karl Meinzer, the working group at the University of Marburg believes that it will be possible to incorporate the second transponder in time to meet the new launch schedule now set for April 82.

In addition to setting out the proposed frequencies, AMSAT DL has simultaneously posited a new mode designation system to supplant the original "semi-system" of designations. Under the AMSAT DL plan, Mode B (70 cm to 2m) becomes Mode U (for uhf) and the new 23 cm to 70 cm mode becomes Mode L (for L-band). (uhf covers 0.3 to 3.0 GHz and the letter-designated microwave band L covers 0.39 to 1.55 GHz). But as a famous writer (was it Goethe?) wrote, "What's in a name?" The tables on the facing page give the proposed Phase IIIB frequencies and the relation of other microwave bands to L band.

AMSAT DL is particularly interested in knowing of any incompatability resulting from the implementation of these frequencies. Of special concern are considerations of interference to Mode L by existing services or equipment coverage problems resulting from the use of frequencies above 436 MHz. Send your comments before 15 Mar. 81 to your national satellite coordinator (such as AMSAT UK, AMSAT Canada, etc.) or AMSAT HQ in Washington. In order for your comments to be useful for the decision making process they must be received and analyzed in the next several weeks.

AMSAT Fills Engineering Slot

On March 2, ZS1FE arrived in Washington to begin his "internship" at the Goddard Space Flight Center under Vice President for Engineering, W3GEY. AMSAT's newest employee is named Gordon Hardeman and he will be an important Phase III team member doing construction, test and integration of Phase IIIB and C. Gordon arrived with his wife, ZS1KE, Molly, from their home in Capetown and were greeted at Washington National Airport by a contingent of AMSAT dignitaries. Gordon and Molly will be making their home in the Greenbelt, Maryland area.

The hiring of ZS1FE completes a world-wide search for a suitable candidate with applicable skills and experience. Before coming to the U.S. Gordon was employed at the South African National Accelerator Laboratory and had been to Antarctica in support of research there by South African scientists. Gordon's background includes advanced degrees in both Physics and Electronic Engineering as well as a host of fascinating job experiences. Gordon is 30 years old and has been a licensed radio amateur since the age of 16. Molly, ZS1KE, is also an active amateur. Gordon has often been heard on the 15-meter Sunday nets on 21.280 and we all look forward to greeting him in person. Welcome Gordon and Molly!

Notes on Operations in February

AO-7 began a new schedule calling for Mode C on Tuesdays. Mode C is a reduced power version of Mode B. Most stations querried reported no noticeable difference in signal levels on the downlink. This is not surprising since the expected difference of 3 dB would amount to ½ S-unit and would be, for most cases, masked by other amplitude variations such as fading, etc. It is hoped that by running in Mode C an improvement in telemetry readability will result. In late February the on-board clock apparently was mode switching around 1100 UTC causing the bird to appear in the "not expected" mode.

AO-8 closed out its third full year of operations in February performing very well in dual modes A/J. The bonus J operations during the week has spawned numerous new activity groups who over the years developed their Mode J capability to a science. Although still running a bit warm (42-47°C), AO-8 appears to be a very healthy specimen. While AO-7's timing is predictable, however, AO-8 is showing the effects of its lower altitude by preceeding its predicted EQX by almost 1½ minutes. The difference between AO-8's actual EQX and that predicted by the Project OSCAR calendar now amounts to 70 to 90 seconds depending on who's doing the measuring and the method employed. The fundamental reason for the difference is the unpredictability of the sun. There simply is no model which accounts for the anomalies seen this season, reports Project OSCAR President, Dr. John Pronko, W6XN. The next update of the calendar will include all recognized correction factors and will be available in mid-March. Meanwhile, subtract 1½ minutes from the Project OSCAR predictions.

More RS Lives!?!

As reports continue to filter in, it is becoming increasingly apparent that the signals reported on various occasions over the month of February are in reality RS-1 come back to life. (See *ASR* Vol. 1 Number 1). In particular, a report filed by a competent observer in Finland, Mr. Birger Lindholm, presents convincing evidence that the signals observed on 29.4 MHz were not of terrestrial origination and did in fact originate from RS-1. Mr. Lindholm reported Doppler shift and his report further notes that the observations, though relatively brief, were made at quite nearly 120-minute intervals. (Recall that the orbital period of RS-1 is about 120 minutes.) In addition, Mr. Lindhold was able to record the telemetry frame and establish values for the various channels.

It would appear in the light of the new evidence, therefore, that RS-1 is indeed alive, though it may be impossible to ascertain its condition precisely. There have been no reports of successful transmission through the transponder. In the light of the very weak signals reported, it seems improbable that the power available would support a QSO. The best guess now seems to be that RS-1 is transmitting a few milliwatts of rf at 29.4 MHz. Mr. Lindholm heard the signals for brief periods only and the LOS was not abrupt as one would expect, but a slow fade into the noise. Thus it seems that absorption and path loss quickly diminish what little power

there is and RS-1 is heard only when near the zenith or, by chance, when whizzing through an ionospheric "hole" or zone of low absorption...a window of sorts. Listen on 29.4 with your turnstile antenna and, if you have a quiet QTH and receiver, perhaps you'll hear RS-1 too. Incidentally, W9KDR says ARRL has "a few" RS overlays for its locators for those who might want one. Contact W9KDR at ARRL HQ for details.

New/Interesting DX

OY5A (SSB-A); OX3WS (A); YU3ME, YU4IW, YU1OYK (SSB-B); TR8BL; 9H1CE. TI2NA active again. UAØLBU was worked by 9M2CR.

Proposed Phase IIIB Frequencies (In MHz)

Mode U

UP	435.30-435.15	DOWN	145.82-145.97
Eng. Beacon	145.99	Gen. Beacon	145.8125

Mode L

UP	1269.95-1269.15	DOWN	436.15-436.95
Eng. Beacon	436.02	Gen. Beacon	436.04

Letter Designations for Microwave Bands

Band	Frequency Range (GHz)
P	0.225-0.390
L	0.390-1.550
S	1.550-5.200
X	5.200-10.90
K	10.90-36.00
Q	36.00-46.00
V	46.00-56.00
W	56.00-100.0

Software Library Start-Up

John Montague, WØRUE, is establishing the materials and procedures for an AMSAT computer software library. The library will collect, maintain, catalog and distribute s/w for the HP-41C (which is related to the HP-67/97 s/w) and also for certain TI hand-helds. When established, the library will be able to copy programs from the masters to your magnetic media (cards). Listings may also be available for a small fee to cover mailing and reproduction costs. Access to the materials will be to any AMSAT member and s/w in the library no doubt will include several versions of satellite tracking programs for both circular polar and high elliptical orbits. The library should be in operation in a few weeks. Watch this column for further news. You may contact John at his mailing address: WØRUE, John Montague, P.O. Box 541, Willenie, MN 55115. Thanks to WØRUE for responding to the call for volunteers in *ASR* #1.

AMSAT Spotlight On: JA1ANG

Last Autumn AMSAT welcomed its newest member of the Board of Directors, Haruo Yoneda, JA1ANG, of Tokyo. Harry, as he insists on being called, is an experienced amateur and world traveler nonpareil. It is in the course of his world travels for a large advertising concern that he carries forth many AMSAT missions. For example, on recent trips he has met with distinguished members of the amateur space community such as W6SP, F8ZS, ZS1BI, DJ4ZC and others. The role of International AMSAT diplomat, besides being of immense value to AMSAT, is one that Harry clearly relishes.

Harry was first licensed in 1936 as J2NG and for many years was a well-known DXer from Tokyo. Harry now holds the U.S. call N3AMW as well as JA1ANG. Having become an avid cw operator, it was fitting he be nominated for the distinguished F.O.C. In the late sixties, however, having done most of what there was to do in DXing, Harry became fascinated with stories about Australis-OSCAR 5. Shortly thereafter he co-founded JAMSAT with JA1NET (who remains as Chairman). Harry did so well on the OSCARs that he was awarded the ARRL Satellite DX Award. And his high level of satellite activity persists to this day. Harry's best DX on the birds include OH9NV on AO-6 and VK4TL on AO-7B. (Check that out on the map. Tokyo is a long, long haul to OH9 and VK4!). His first U.S. contact on AO-6 was the (then) very active K7BBO.

One of the talents required of Harry in the pursuit of his occupation is the ability to communicate well in several languages. His English is, fortunately for us, impeccable. When heard on ssb on the Asia-Pacific AMSAT net, of which he is NCS, Harry is heard with not a Japanese accent as one might expect, but rather (would you believe?) a distinctly New York version of the King's English. That's explained, presumably, by his being a N.Y. resident during the fifties when he attended Columbia University for his Master's.

More than any other function, Harry sees his role as Director as being one in which he functions as a buffer between the user community on the one hand and the engineering staff on the other. As if to emphasize the importance of that role, the Board made Harry's first assignment a vital one: Phase IIIB bandplanning. Harry won't have to go far for lots of advice on that topic. The 500,000+ hams in Japan will offer, we suspect, quite a variety of perspectives on the issues. And in bringing all the recommendations together, Harry faces a task worthy of his experience as AMSAT's traveling diplomat. 73 es GL to one FB OM from *ASR* and AMSAT!

ON THE HORIZON

A Calendar Of Future Events Of Interest To The Satellite Community

March 1981

14-15: ARRL National Convention, Orlando, Fla.
15: UoSAT: T = − 6 months
24: Phase IIIB: T = − 13 Months

April 1981

11-12: Phase III Command Mtg., GSFC
15: UoSAT: T = − 5 Months
18-19: Board of Directors Mtg., GSFC
24: Phase IIIB: T = − 12 Months
25-26: Dayton Hamvention

Details:

The ARRL National Convention will be held in Orlando, Florida, 14-15 March. AMSAT Florida Area Coordinator W4MID assisted by WD4FAB and WB4ZXS are arranging AMSAT booth and programs. HQ staff attending will be President W3IWI, Executive Vice President WA2LQQ, Vice President - Special Projects K9LF. Representing ARRL in satellite activities will be AA2Z, Mark Wilson, ARRL's Director of Satellite Education. W4MID is looking for additional help. Contact Jim on the Seasat Net: Sundays 0800 EST on 7280 kHz or by phone.

K9PVW is again coordinating arrangements for the Dayton Hamvention. AMSAT will as usual be strongly represented. More on this in a subsequent issue.

Ariane Launch Schedule

Vehicle	*Year*	*Mission & Customer*
L03	81	Apple(ISRO) + Meteosat(ESA)
L04	81	Marecs A (ESA)
L5	81	Exosat (ESA)
L6	82	Marecs B(ESA) + Sirio(ESA)
L7	82	ECS 1(ESA) + Phase IIIB(AMSAT) + X
L8	82	Intelsat F6
L9	82	Intelsat F7
L10	82	Intelsat F8
L11	82	ECS 2 (ESA) + X
—	83	TC1A (France)
—	83	TC1B (France)
—	83	TV SAT (Germany)
—	84	Spot (France)
—	84	TDF (France)
—	84	L-SAT (ESA)
—	84	Intelsat F13
—	85	OPMET (ESA) + X
—	85	Giotto (ESA)
—	85	ECS 3 (ESA) + X

X = Open Slot

ARRL National Convention

The 1981 ARRL National Convention in Orlando, Florida will be alive with AMSAT activities. Northern Florida Area Coordinator Jim Tumilty, W4MID, and AMSAT President Tom Clark, W3IWI, will host the Amateur Satellite Technical Session, scheduled from 9 a.m. to noon on March 14th. Topics of discussion include:

Two Decades of Amateur Satellites - Tom Clark W3IWI

Amateur Satellites as Educational Tools - Mark Wilson AA2Z, ARRL Satellite Education Director

Satellite Location and Operations - John McDonald WB4ZXS

Ground Station Equipment - Stan Wood WA4NFY

Tracking OSCAR with your Computer - DeWitt Graham WA4GJQ

Satellite DX'ing - Nick Laub WØCA (holder of first Satellite WAC)

Also scheduled are an Open Forum - Question and Answer session and live OSCAR operations and demonstrations, both Saturday and Sunday, March 14 and 15. In addition to the above participants, AMSAT Executive V.P. Vern "Rip" Riportella, WA2LQQ, Vice President Bill Brown, K9LF, Dick Jansson, WD4FAB, and other AMSAT Officers and hardware/software contributors will be in attendance to answer questions about present and future satellites and activities. If you will be attending the National Convention, visit the AMSAT booth and attend the Satellite programs and technical session. Further information is available from W4MID, the AMSAT HQ office, or from the ARRL.—*KEØT*

Harry Yoneda, JA1ANG, presents $5,500 donation check from JAMSAT to Ray Soifer, W2RS, who accepts on behalf of AMSAT, March 2 in New York City. (See page 1)